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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,356	10/10/2003	David E. Rhodes	SON-05-1376	3196

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IP GROUP OF DLA PIPER US LLP
ONE LIBERTY PLACE
1650 MARKET ST, SUITE 4900
PHILADELPHIA, PA 19103

EXAMINER	
STAICOVICI, STEFAN	

ART UNIT	PAPER NUMBER
1732	

DATE MAILED: 11/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/684,356	RHODES ET AL.
	Examiner	**Art Unit**
	Stefan Staicovici	1732

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 22 August 2006.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-11,13,14 and 16-29 is/are pending in the application.

4a) Of the above claim(s) 16-22 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-11, 13-14, 23-29 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 8/22/2006.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicants' amendment filed August 22, 2006 has been entered. Claims 1-11, 13-14 and 16-29 are pending in the instant application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-8, 10-11, 13-14 and 23-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/01276 in view of Dereich (US Patent No. 2,922,729) and in further view of Muruyama *et al.* (US Patent No. 3,748,204).

WO 99/01276 teaches the basic claimed process for making a hollow cylindrical core including, winding a first substrate (3) with a layer of activable adhesive onto a mandrel (7), drying said substrate (see page 4, lines 7-8), activating said adhesive into a tacky state to form said hollow cylindrical core (see Abstract). Further, WO 99/01276 teaches a process using two substrates, a first and a second substrate, wherein said first substrate includes an adhesive that is activated to bond said first and second substrates (see page 5, lines 2-6). It is submitted that a pressure is applied

Regarding claims 1, 10 and 23-24, WO 99/01276 does not teach an activable adhesive including a wet slurry of sodium silicate. Dereich ('729) teaches a sodium silicate adhesive composition including sugar (dielectric reducing agent). Therefore, it would have been obvious for one of ordinary skill in the art to provide a wet slurry of sodium silicate and sugar as taught by Dereich ('729) as an activable adhesive in the process of WO 99/01276 because, Dereich ('729) teaches that such an adhesive provides for improved resistance to moisture, hence providing for an improved product.

Further regarding claims 1, 10 and 23-24, WO 99/01276 in view of Dereich ('729) does not teach heating the moisture in the substrate in order to activate the adhesive. Muruyama *et al.* ('204) teach a process for a activating an adhesive placed between a plurality of substrates including, applying microwave energy that is absorbed by said substrates such that the residual moisture in said substrates is heated to therefore heat the adhesive between said substrates (see claim 1). Therefore, it would have been obvious for one of ordinary skill in the art to provide the microwave heating method of Muruyama *et al.* ('204) to activate the adhesive in the process of WO 99/01276 in view of Dereich ('729) because Muruyama *et al.* ('204) specifically teach that such a heating mechanism provides for improved adhesion and productivity, hence providing for an improved product.

In regard to claims 4, 13-14 and 25, Dereich ('729) teaches an adhesive including 90 parts sodium silicate and 10 parts sugar (dielectric reducing agent). Therefore, it would have been obvious for one of ordinary skill in the art to provide a wet slurry of sodium silicate and sugar as taught by Dereich ('729) as an activable adhesive in the process of WO 99/01276 in view of Muruyama *et al.* ('204) because, Dereich ('729) teaches that such an adhesive provides for improved resistance to moisture, hence providing for an improved product.

Specifically regarding claims 5-7 and 27-28, WO 99/01276 teaches forming a hollow cylindrical core including, winding a first substrate (3) with a layer of activable adhesive onto a mandrel (7) and activating said adhesive into a tacky state to form said hollow cylindrical core (see Abstract). Further, Muruyama *et al.* ('204) teach a process for a activating an adhesive placed between a plurality of substrates including, applying microwave energy that is absorbed by said substrates such that the residual moisture in said substrates is heated to therefore heat the adhesive between said substrates (see claim 1). Hence, it is submitted that said mandrel is invisible to microwave radiation in order to provide safe working conditions and not allow reflection of microwave energy into the environment and also to allow microwave absorption only be the substrate in the process of WO 99/01276 in view of Dereich ('729) and in further view of Muruyama *et al.* ('204).

Regarding claims 2-3 and 26, although WO 99/01276 teaches a drying step and Muruyama *et al.* ('204) teach the existence of residual moisture, WO 99/01276 in view of Dereich ('729) and in further view of Muruyama *et al.* ('204) do not teach the specific residual moisture content. However, it is submitted that the amount of heat developed at the interface is dependent on the residual moisture content, hence said residual moisture content is a result-effective variable. Therefore, it would have been obvious for one of ordinary skill in the art to use routine experimentation to determine an optimum residual moisture content of 1-15%, preferably 6-8% in the process of WO 99/01276 in view of Dereich ('729) and in further view of

Muruyama *et al.* ('204) because the amount of heat developed at the interface is dependent on the residual moisture content, hence said residual moisture content is a result-effective variable.

Specifically regarding claim 8, WO 99/01276 teaches a process using two substrates, wherein a first substrate includes an adhesive that is activated to bond said substrates (see page 5, lines 2-6).

Specifically regarding claim 29, although WO 99/01276 in view of Dereich ('729) and in further view of Muruyama *et al.* ('204) do not teach activation of said adhesive after forming said hollow cylindrical core, it is noted that whether activation occurs prior or after forming said hollow cylindrical core is a mere inversion of a process step without any unexpected results and as such it would have been obvious for one of ordinary skill in the art to invert the adhesive activation step in the process of WO 99/01276 in view of Dereich ('729) and in further view of Muruyama *et al.* ('204) due to a variety of advantages such as equipment simplicity by combining the rolling step with the activation step, hence reduced maintenance costs and improved productivity.

Regarding claim 11, WO 99/01276 teaches applying pressure to said hollow cylindrical core using rollers (6) after activation of the adhesive (see Figure 2).

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/01276 in view of Dereich (US Patent No. 2,922,729) and in further view of Muruyama *et al.* (US Patent No. 3,748,204) and Pricone *et al.* (US Patent No. 4,672,089).

WO 99/01276 in view of Dereich ('729) and in further view of Muruyama *et al.* ('204) teaches the basic claimed process as described above.

Regarding claim 9, although WO 99/01276 teaches rolling the adhesive coated substrate prior to activating said adhesive, WO 99/01276 in view of Dereich ('729) and in further view of Muruyama *et al.* ('204) do not teach applying a protective coating to the adhesive layer. However, it is noted that it is well known to protect a moisture-activated adhesive by applying a protective coating that is removed upon activation of said adhesive as evidenced by Pricone *et al.* ('089) who teach applying a release film to protect a heat-activated adhesive layer (see col. 4, lines 23-35). Therefore, it would have been obvious for one of ordinary skill in the art to provide the protective release film of Pricone *et al.* ('089) to the dried substrate in the process of WO 99/01276 in view of Dereich ('729) and in further view of Muruyama *et al.* ('204) because of known advantages such as improved adhesion, hence providing for an improved product. It is noted that the teachings of Pricone *et al.* ('089) were provided in response to Applicants' request for objective evidence pursuant to MPEP §2144.03(C) to show that it is well known to use a protective layer to protect an adhesive layer.

Declaration of Arnold B. Floyd, Jr. under 37 C.F.R. §1.132

5. The Declaration under 37 CFR 1.132 filed 8/22/2006 is insufficient to overcome the rejection of claims 1-11, 13-14 and 23-29.

6. Applicants' argument that the prior art does not teach sugar as a dielectric agent (see ¶¶ 3-5 of the Declaration filed 8/22/2006) is not persuasive because the fact that Applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious.

See Ex parte Obiaya, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). It is noted that Dereich ('729) teaches a sodium silicate adhesive composition including sugar.

7. Applicant's argument that the prior art of record does not teach that latent water in the substrate is heated and driven into the adhesive to thereby solubilize and activate the adhesive is not persuasive because such a limitation is not recited in the claimed invention (see ¶¶ 6-8 of the Declaration filed 8/22/2006).

Response to Arguments

8. Applicants' remarks filed August 22, 2006 have been considered.

9. In response to applicant's arguments against the teachings of WO 99/01276, Dereich ('729) and Muruyama *et al.* ('204) individually (see pages 10-12 of the amendment filed 8/22/2006), it is noted that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

10. In response to applicant's argument that the prior art of record does not teach that sugar is a dielectric reducing agent (see pages 10-12 of the amendment filed 8/22/2006), the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See Ex parte Obiaya, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

11. Applicants argue that contrary to the prior art of record, the instant claimed invention is drawn to "exposing the substrate to microwave energy to activate the adhesive" (see page 10 of the amendment filed 8/22/2006). Contrary to Applicants' position, the microwave energy in the instant invention is used to heat the fibrous substrate and thereby indirectly activate the adhesive using the resulting heat from the heated fibrous substrate (see Abstract of the instant application). Further, it is noted that Muruyama *et al.* ('204) specifically teach such a process for a activating an adhesive placed between a plurality of substrates including, applying microwave energy that is absorbed by said substrates such that the residual moisture in said substrates is heated to therefore then heat the adhesive between said substrates (see claim 1 of Muruyama *et al.* ('204)).

12. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

13. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See In re Fine, 837 F.2d 1071, 5

USPQ2d 1596 (Fed. Cir. 1988) and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case,

(a) WO 99/01276 teaches a process for making a hollow cylindrical core including, winding a first substrate (3) with a layer of activable adhesive onto a mandrel (7), drying said substrate (see page 4, lines 7-8) and activating said adhesive into a tacky state to form said hollow cylindrical core (see Abstract).

(b) Dereich ('729) teaches a sodium silicate adhesive including sugar (dielectric reducing agent). Therefore, it would have been obvious for one of ordinary skill in the art to provide a wet slurry of sodium silicate and sugar as taught by Dereich ('729) as an activable adhesive in the process of WO 99/01276 because, Dereich ('729) teaches that such an adhesive provides for improved resistance to moisture, hence providing for an improved product and also because WO 99/01276 teaches an adhesive, hence suggesting the adhesive of Dereich ('729).

(c) Muruyama *et al.* ('204) teach a process for a activating an adhesive placed between a plurality of substrates including, applying microwave energy that is absorbed by said substrates such that the residual moisture in said substrates is heated to therefore heat the adhesive between said substrates (see claim 1). Therefore, it would have been obvious for one of ordinary skill in the art to provide the microwave heating method of Muruyama *et al.* ('204) to activate the adhesive in the process of WO 99/01276 in view of Dereich ('729) because Muruyama *et al.* ('204) specifically teach that such a heating mechanism provides for improved adhesion and productivity, hence providing for an improved product and also because WO

99/01276 teaches a heat-activated adhesive, hence suggesting the heat-activated process of Muruyama *et al.* ('204).

14. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., latent water in the substrate is heated and driven into the adhesive to thereby solubilize and activate the adhesive) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

15. Applicants argue that Dereich ('729) does not teach a sugar to sodium silicate ratio of 5:95 to 35:65 (see page 13 of the amendment filed 8/22/2006). However, Dereich ('729) teaches an adhesive including 90 parts sodium silicate and 10 parts sugar (resin) (dielectric reducing agent). Further, Dereich ('729) teach a resin composition including 200 g sugar, 112 g formalin and 37.5 g urea. Hence, the sugar is about 60% of the total resin composition, which is about 5% of the adhesive composition. Furthermore, Dereich ('729) teaches that more sugar may be used as required (see col. 3, lines 29-32), hence suggesting that the amount of sugar is a result effective variable.

16. Applicants argue that the prior art of record does not teach that the temperature depends on the moisture level (see page 14 of the amendment filed 8/22/2006). However, as shown throughout prosecution of the instant application, the amount of heat developed at the interface is dependent on the residual moisture content, hence said residual moisture content is a result-effective variable. That is, if more moisture exists at the interface than a higher tempersture is

achieved. For example, in a simple commercial microwave woven, when cooking vegetable it is suggested to wash the vegetables prior to microwave heating because the water remaining on the surface of the vegetable heats up and allows for faster cooking, Similarly, in the instant application, by having a higher level of moisture at the interface a higher temperature is ultimately obtained. Therefore, it would have been obvious for one of ordinary skill in the art to use routine experimentation to determine an optimum residual moisture content of 1-15%, preferably 6-8% in the process of WO 99/01276 in view of Dereich ('729) and in further view of Muruyama *et al.* ('204) because the amount of heat developed at the interface is dependent on the residual moisture content, hence said residual moisture content is a result-effective variable.

17. Applicants argue that the prior art does not teach or suggest applying a protective coating (see pages 14-15 of the amendment filed 8/22/2006). In response, MPEP §2144.03(A) states that,

> "...it might not be unreasonable for the examiner in a first Office action to take official notice of facts by asserting that certain limitations in a dependent claim are old and well known expedients in the art without the support of documentary evidence provided the facts so noticed are of notorious character and serve only to 'fill in the gaps' which might exist in the evidentiary showing made by the examiner to support a particular ground of rejection." In re Zurko, 258 F.3d 1379, 1385, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001).

Furthermore, in view of Applicants' concern, the teachings of Pricone *et al.* ('089) were provided as objective evidence pursuant to MPEP §2144.03(C) to show that it is well known to use a release (protection) layer to protect an adhesive layer.

18. Applicants argue that Dereich ('729) does not teach a wet slurry (see page 16 of the amendment filed 8/22/2006). However, Dereich ('729) teaches a sodium silicate adhesive solution including sugar (dielectric reducing agent). It is submitted that a solution is a wet slurry.

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Staicovici, Ph.D. whose telephone number is (571) 272-1208. The examiner can normally be reached on Monday-Friday 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson, can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stefan Staicovici, PhD
Stefan Staicovici
11/8/06
Primary Examiner

AU 1732

November 8, 2006